

Easing dental visits worldwide with HP Converged Infrastructure

A-dec drives global growth while avoiding disruptive data center overhaul and reclaiming 1,350 IT hours yearly



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James Ward, Sr. Technologist, A-dec, Inc.

Objective

Design an agile, scalable enterprise hosting platform that supports the company’s 5-year strategic roadmap while addressing 20% year-over-year data growth challenges

Approach

Deploy a compact, energy-efficient, Converged Infrastructure, including virtualized servers clustered on HP ProLiant server blades in HP BladeSystem enclosures, HP StorageWorks SAN, HP Virtual Connect, HP storage and server management tools, and virtualization and backup software from Microsoft®

IT improvements

- 99.99% uptime with clustered configuration
- Quadrupling virtual machine (VM) count on physical servers (20 VMs per blade vs. 5 VMs per rack server)
- 8-hour weekly backup window eliminated
- Eliminating 800 hours of downtime yearly
- 1,350 IT staff hours reclaimed for new projects through more efficient server management, deployment, networking and backup solutions
- Doubled capacity for new production server administration

Business benefits

- Disruptive data center overhaul avoided
- Significant reduction in power and cooling costs
- Near elimination of reduction in off-site tape storage costs
- Considerable reduction in networking hardware costs



Comfort in the dentist’s chair

Many people have encountered A-dec, Inc.’s technology and innovation without even knowing it. A-dec sells products in 97 countries, and dentists and their patients around the world have experienced these reliable, creative solutions. Helping dental teams thrive is A-dec’s objective.

For almost 50 years, A-dec has been a pioneering manufacturer and innovator in the global dental equipment business—leading the market for customer-centric dental solutions. Awards and industry recognition have followed, with accolades from the American Dental Association, the American Dental Trade Alliance, and the Association of Marketing and Communications Professionals.

With nearly 50% market share in the U.S., the company continues to focus on international growth. Edging into European and Australian markets while

HP customer case study: Converged Infrastructure

Industry: manufacturing



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**Ralph Osburn, IS Technology Manager,
A-dec, Inc.**

continuing to grow business at home, A-dec was beginning to experience year-over-year data growth of 20%.

Every system is critical

With global operations came the need for 24x7 systems availability—something its aging rack server infrastructure was barely able to deliver. “It used to be that some systems could suffer downtime while others were considered business-critical,” recalls Ralph Osburn, IS technology manager for A-dec. “We’ve really seen those lines blur and go away—almost every system today is considered critical. Availability in everything is just the expectation now from business. It’s not acceptable anymore to have to wait two weeks to bring a new server online.”

At the same time, another expectation was growing in the company—the need to deliver higher service levels without adding IT resources. “Along with demand for more agility and availability in our delivery, we’re facing the challenges of doing more with the same amount of resources,” Osburn relates. “We were certainly looking to improve our operational efficiency.”

A-dec is a large Microsoft SharePoint user, with more than 700 internal SharePoint sites. It’s a tool that propels a lot of critical processes for A-dec. “We use SharePoint for collaboration, but it’s also a part of our workflow for communications such as order management,” Osburn says. “For us, it’s just as critical as an ERP system or email. It’s not a luxury.”

Maxed out at the data center

Offering the kind of around-the-clock availability and server redundancy A-dec needed was going to be tricky given its IT infrastructure. A-dec had dipped its toe into the virtualization pool with its previous server environment, but knew its older-generation HP ProLiant DL360 rack servers were only capable of running about five virtual machines (VMs) per physical server, according to Osburn. “We were at a point in our data center where, if we didn’t do something soon, we were going to have invest in power improvements.”

So A-dec enlisted the help of Denali Advanced Integration, an HP partner, to design a next-generation server, storage, and networking environment that would support its vision to enable high availability, virtualization, and eventually disaster recovery.

Quadrupling virtual machine density

Together, Denali and A-dec designed a virtualized infrastructure based on HP ProLiant BL490c server blades in HP BladeSystem c7000 enclosures. Running Microsoft Hyper-V to virtualize its application servers and loading each blade with 72 GB of RAM, A-dec has increased its VM count while reducing its power consumption.

“We’ve already doubled our VM capacity with Hyper-V running on HP ProLiant BL490c server blades,” Osburn shares. “Today, we have an eight-node cluster running about 90 virtual servers, and it has capacity for almost double that. We believe we can comfortably go up to 20-to-1, and could probably push it higher if we purchased more RAM.”

Avoiding a disruptive power upgrade

Virtualizing on HP server blades offered A-dec a way to support business growth while avoiding a major data center overhaul. “With our previous physical server infrastructure, any new growth was going to lead to us rebuilding the power feed to our data center,” Osburn explains. “We were literally at the ceiling of what we could do with our current uninterruptable power supplies and power feeds. By virtualizing on HP ProLiant BL490c server blades with high RAM density, we achieved our high availability goals and avoided a costly data center upgrade project.”

Additional savings have come to light as well. With the consolidation of its physical server environment, A-dec is spending less money on its monthly energy bill. “With HP ProLiant BL490c server blades, we’ve lowered our power consumption by 40%.”

About A-dec, Inc.

For almost 50 years, A-dec, Inc. (www.a-dec.com) has been a leading manufacturer and innovator in the U.S. dental equipment business, pioneering the market for reliable solutions in office asepsis, ergonomics, and productivity. Awards and industry recognition have followed, with accolades from the American Dental Association, the American Dental Trade Association, and the Association of Marketing and Communications Professionals.

Strategic storage

As part of its data center upgrade, A-dec also deployed a new storage area network (SAN). “We knew they needed a storage platform that could dramatically improve performance and seamlessly support both Fibre Channel and iSCSI fabrics, so we recommended HP StorageWorks EVAs combined with HP Clustered Storage Servers,” says Patrick Thompson, enterprise account manager at Denali Advanced Integration.

Together, A-dec and Denali deployed HP StorageWorks EVA6400 and EVA4400 SANs with HP Storage Essentials management software to replace its EMC CLARiiON storage environment. The HP solution would help A-dec provide more than just storage for its applications and databases. “So often, storage seems like an afterthought or a non-strategic component of the solution,” Osburn relates. “But for us, HP StorageWorks EVA technology was a big part of our overall strategy, allowing us to deliver better throughput, perform continuous data replication, and eliminate our backup window.”

Near elimination of off-site tape storage costs

Previously, A-dec was performing weekly backups to tape. When Osburn and team began looking into a disk-to-disk-to-tape backup strategy based on replicating data between two locations with the HP StorageWorks EVA units, a better solution came into focus.

The team built a three-tier storage network with the first stage going to the EVA6400 SAN, which replicates data to an EVA4400 SAN in a second data center using Microsoft Data Protection Manager software. The third tier is long-term tape storage via an HP StorageWorks MSL8096 tape library.

Relying on replicated data backups on the EVA4400 SAN for file and system restores means A-dec is decreasing its reliance on tape. “By moving to continuous data replication between two HP StorageWorks EVA SANs, we’re saving 100 hours per year on tape handling alone, and have almost eliminated off-site tape storage costs,” Osburn says.

The solution has eliminated weekly 8-hour tape backups for IT while giving A-dec a near-instantaneous recovery time objective for disaster recovery.

Reclaiming tier-one storage, reducing legal risk

HP Storage Essentials software delivers deep visibility into A-dec’s SAN environment. “With HP Storage Essentials software, we’re able to increase the performance of our StorageWorks EVA SANs by isolating and managing any issues as they occur,” Osburn says.

“What we’re really doing with this Converged Infrastructure is building our own private cloud. That’s the goal.”
Ralph Osburn, IS Technology Manager, A-dec, Inc.

When the team first installed the software, it discovered some problem areas that had existed on its previous SAN and gone undetected for years. “Since we’ve implemented HP Storage Essentials, we’ve eliminated a terabyte of data that we determined was unnecessary, and some of it was potentially harmful and risky to the business,” Osburn recalls. “We started scanning the file system using HP Storage Essentials and discovered huge Microsoft Outlook personal storage table (PST) files being saved to users’ home directories. We didn’t know those were there to begin with.”

Because PST files are susceptible to corruption, and are discoverable in a legal discovery proceeding, A-dec was able to avoid potential risk and reclaim valuable tier-one storage. “One terabyte out of 18 is a significant savings for us,” Osburn says.

Significant savings on networking hardware

The team is also leveraging HP Virtual Connect solutions—blade interconnects for the HP BladeSystem c-Class—which allow A-dec to tailor the bandwidth it needs to deliver high availability to its business-critical applications. Osburn and team use HP Virtual Connect Flex-10 10Gb Ethernet Modules to create connections from blade-hosted virtual machines to SANs and VLANs with the ability to fine-tune performance for each VM.

Customer solution at a glance

Hardware

- HP ProLiant BL490c server blades
- HP BladeSystem c7000 enclosures
- HP StorageWorks EVA6400 and EVA4400 storage arrays
- HP StorageWorks MSL8096 tape library
- HP Virtual Connect Flex-10 10Gb Ethernet Modules

Software

- HP Storage Essentials Software
- HP Insight Control Management Software
- Microsoft SharePoint
- Microsoft Hyper-V Core
- Microsoft Data Protection Manager

Operating system

- Microsoft Windows® Server 2008 R2

Network protocol

- TCP/IP
- 10Gb Ethernet connectivity to servers

HP partner

- Denali Advanced Integration (denaliai.com)

By consolidating these connections within the HP BladeSystem enclosure, A-dec is significantly reducing additional hardware, while giving Osburn and his team the flexibility to easily deploy and manage new connections within the BladeSystem more efficiently. "A lot of IT people really don't understand this yet," relates James Ward, senior technologist at A-dec. "Server virtualization is such an obvious win, but now we've taken the next step and started to virtualize the network inside the blade enclosure itself with HP Virtual Connect—it's a whole new level of agility and flexibility that we didn't fully appreciate until we started to deploy it."

Reclaiming 1,350 IT administration hours a year

The sum of the technologies in A-dec's HP solution—highly efficient virtualized ProLiant server blades and enclosures, multi-fabric HP EVA SANs, and flexible Virtual Connect connectivity—combine to bring higher levels of efficiency, availability, and compute power to business than the individual components themselves. "What we're really doing with this Converged Infrastructure is building our own private cloud," says Osburn. "That's the goal."

With its ultimate goal in sight, the benefits are already stacked in A-dec's favor, according to Osburn. "All told, Denali's design using a combination of HP solutions is helping A-dec reclaim 1,350 IT administration hours per year while realizing considerable savings and achieving 99.99% system availability," he says.

As it continues to drive efficiency and manage growth, IT also looks forward to implementing tools from its HP Insight Control management software in the near future.

For the IT staff at A-dec, those benefits mean achieving goals while growing the department staff budget at a much lower rate than traditionally experienced. "We've always been lean in IT," Osburn says. "And that's in line with A-dec as a manufacturer—we've always been guided by lean growth principles, and HP Converged Infrastructure is helping us grow in a sustainable way for the future."

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